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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/686,652

10/17/2003

Yukinori Hirose

244085US2

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03/10/2005

OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
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ALEXANDRIA, VA 22314

EXAMINER

VANORE, DAVID A

ART UNIT

PAPER NUMBER

2881

DATE MAILED: 03/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/686,652	Applicant(s) HIROSE, YUKINORI	
	Examiner David A. Vanore	Art Unit 2881	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 December 2004.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Arguments

Applicant's arguments filed December 17, 2004 have been fully considered but they are not persuasive.

Applicant argues at page 7, line 3 of the response that Grunewald (USPN 5,986,264) does not teach a crystal analyzing apparatus. The examiner disagrees. Grunewald teaches a device having an ion source and an electron beam source with an imaging system detecting Secondary Electrons (SE), Backscattered Electrons (BSE), and Transmitted Electrons (TE). The information gained via detection of these various particles is used in the apparatus of Grunewald to construct an image of the sample in situ. This information and the image produced are necessarily reflective of the crystalline structure of the sample.

Applicant further argues at page 7, line 9 of the response that Grunewald does not disclose a data processing unit configured to construct three dimensional data about a crystal orientation distribution of a sample. The examiner disagrees. Grunewald teaches that from the collected SE, BSE, and TE data, an image of the sample is constructed which reflects mass or topography contrast images from BSE mode, internal structure images when operated in TE mode, and specimen surface observation when operated in SE mode. Clearly, the detected SE, BSE, and TE data are analyzed to image desired arbitrary regions of the specimen under test.

Applicant argues that the previous Office action does not supply a rationale as to how Grunewald can be said to teach a data processing unit. Grunewald impinges electron beams on a sample using an SEM. Images are displayed on a monitor of the

SEM (Col. 6 Lines 56-68). Therefore, a data processing unit, running analysis software (Col. 7 Lines 3-10) performs the necessary data processing. The SEM converts detected electron into data which is then converted to a displayed image through data processing, typically accomplished in the modern SEM via a computing means.

Applicant argues at page 7 bridging to page 8, that Grunewald does not detect a backscattered electron diffraction pattern because Grunewald fails to construct three dimensional data about a crystal orientation on the basis of results detected by a detecting portion. The examiner disagrees. As pointed out above, the BSE detected are utilized to construct mass contrast or topographic contrast images of the sample. Since at least the topographic contrast analysis is a three dimensional representation of the three dimensional sample, reflective of the crystalline structure of the sample, Grunewald does indeed teach the required limitation of detecting a backscatter diffraction pattern.

Applicants arguments at page 8, line 11, are correct. The control portion 19 does in fact control the emission of the ion beam. The imaging of an arbitrary region of the sample in two or three dimensions is part of the control portion of the SEM (Col. 6-7).

All limitations are anticipated by Grunewald, and the claims stand finally rejected.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Art Unit: 2881

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4 stand rejected under 35 U.S.C. 102(b) as being clearly anticipated by Grünewald.

Grünewald teaches a crystal analyzing apparatus comprising the following as recited in the claims:

Claims 1 and 3: A crystal analyzing apparatus comprising:

- An ion beam emitting portion (1, 2)
- An electron beam emitting portion (3)
- A detecting portion for detection of a backscattered diffraction pattern (7, 8, 9)
- An analyzing portion for defining an arbitrary three dimensional region for performing analysis (Coupled to the SEM, running analysis software, note Col. 7).

Claims 2 and 4: A crystal analyzing apparatus:

- where the apparatus analyzes and optimizes the position and orientation of the crystal relative to the ion and electron sources while analyzing the orientation of the sample (Col. 3 Line 56 through Col. 4 Line 43).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David A. Vanore whose telephone number is (571) 272-2483. The examiner can normally be reached on M-F 7:30-5:00.

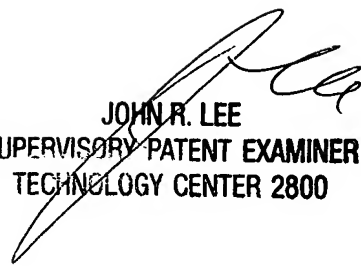
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Lee can be reached on (571) 272-2477. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800